

Abstract

A method for synthesizing a nucleic acid molecule comprising at least one non-canonical nucleoside triphosphate using a mutant polymerase having a reduced discrimination between canonical and non-canonical substrates is disclosed. The method comprises incubating a template nucleic acid in a reaction mixture comprising the mutant nucleic acid polymerase and the appropriate canonical and non-canonical nucleoside triphosphates which are desired substrates for the mutant nucleic acid polymerase. The present invention is also a method of determining the sequence of a nucleic acid molecule using the mutant polymerase to create a nucleic acid molecule comprising at least one non-canonical nucleoside triphosphate.